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THE BRYOLOGIST.

VOL. IV. OCTOBER, 1901. NO. 4.

An index to the four volumes of THE BRYOLOGIST is being prepared and will be issued in connection with the January, 1902, number. It is suggested that all having files complete their sets and bind with this Index in one volume. Hereafter each year, of six numbers, will have its own Index.

LICHENS—PARMELIA.

BY CAROLYN W. HARRIS.

(WITH PLATE VI.)

The Parmelias are widely distributed, and the greater number are found in North America. In the vicinity of Chilson Lake, Essex County, New York, in the southeastern part of the Adirondacks, eighteen species have been collected. No doubt as great a number could be found in other localities. On old apple trees, as well as on many of the other trees, will be found one of the commonest of the Parmelias, *P. caperata.* It grows in large, round mats, of a light pea green color, with a wrinkled surface, which is usually covered with soredia; it is rarely found in fruit. Specimens of *P. caperata* are often found a foot in diameter. On the rocks will be found another Parmelia which is very common, *P. conspersa.* Like *P. caperata* it is a delicate green, but the thallus is smoother and clings closely to the substratum. The apothecia, which are very common, are dark brown. These two Parmelias are readily identified and can be found in any country place where there are trees, stone walls, and rocks.

The thallus of the Parmelia is foliose, large, distinctly branched, and lobed. It is held to the substratum by black rhizoids. The medullary layer is composed of long loose filaments, like tow, which give it a soft woolly appearance. By breaking the thallus this can be seen with a good hand lens. The outer, or cortical layer is thin. The apothecia are scattered, but are usually more numerous at the centre. They are cup shaped, the disk generally chestnut or brown and the margin thin. The species vary in habit but are usually horizontal and leaf like. On many species are found soredia, generally the color of the thallus; this varies from gray or brown tinged with green to blue green and dark brown. In two or three species the thallus is almost black.

The Parmelias show the highest development of the thalline type. In many specimens there is a continued marginal growth, while the centre portion dies away. The name comes from Parma, meaning a buckler or round shield, with a rim, in allusion to the appearance of the apothecia.

The July BRYOLOGIST was issued July 9th, 1901.

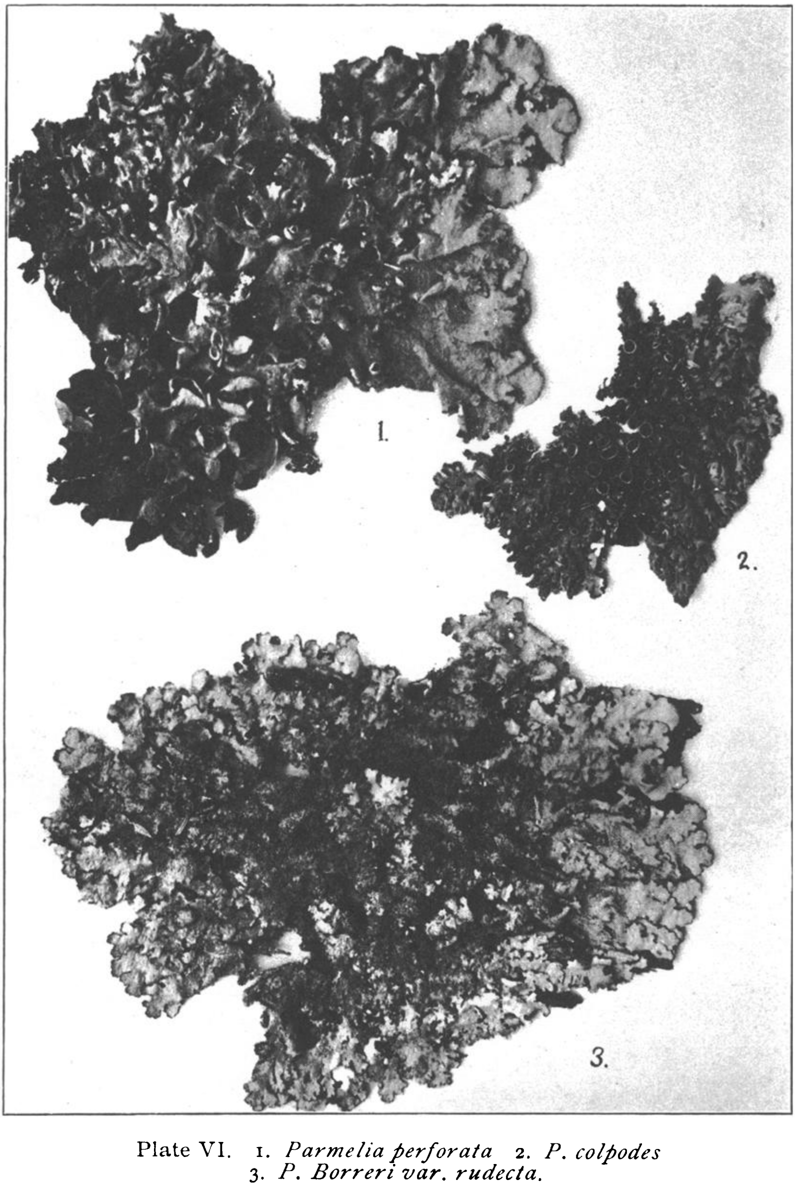

Plate VI. 1. *Parmelia perforata* 2. *P. colpodes*
3. *P. Borreri var. rudecta.*

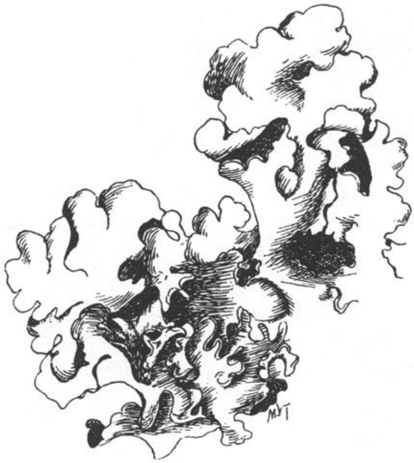

Fig. 1. *Parmelia perlata.*

PARMELIA PERLATA (L.) Ach. (Fig. 1.) This species, while one of the most common of the Parmelias, is also one of the most confusing to the novice, as it is seldom found in fruit, and the appearance of the thallus closely resembles certain Cetrarias and Peltigeras. The thallus is much expanded, very leaf like, generally smooth, but sometimes crumpled, is greenish yellow, gray green, slate color and even light brown. Beneath it is black with reddish brown margins; these turn back in such a manner that they are often mistaken for apothecia by the beginner. The lobes are not ciliated but are often covered with white soredia. Generally the under surface is smooth but occasionally black fibrils are present. The apothecia are large, the disk a greenish brown with entire margin, which when fully developed splits down to the centre of the cup. Apothecia are so rare that in a hundred specimens one in fruit may not be found. *P. perlata* is usually found on rocks, growing to a large size, often a foot in diameter. Occasionally it is found growing on trees or old logs.

PARMELIA PERFORATA (Jacq.) Ach. (Plate VI. 3.)—The thallus and general appearance of this species closely resembles *P. perlata*, but can easily be distinguished from it by the cilia with which the margins of the lobes are covered: in some specimens they are very abundant, looking like a fringe of hair. This seems to be especially marked in the *P. perforata* found in the Southern States. The color is glaucescent, or blue sea green, with a whitish bloom. Beneath it is black, frequently covered in places with a bunch of black fibrils. The apothecia are abundant, and usually are very large. The disk is a dark chestnut color, the margin thin and entire. At the centre the apothecia are usually perforated, hence its specific name. It is found on trees and rocks, more often fertile on trees.

PARMELIA CRINITA Ach. Thallus the same in color as *P. perforata*, the lobes ciliated, but not so abundantly as in *P. perforata*. The thallus is usually densely covered with isidioid granules, or coral-like excrescences. Beneath it is black and fibrillose. The apothecia are not so common as in *P. perforata*; they are large and round, not perforated. While much like some specimens of *P. perlata* it can be distinguished from it by the isidioid growth on the upper side of the thallus, and the mat-like fibrils on the under side. also by the cilia on the margins. Its habitat is trees and rocks; the thallus of the rock form has usually finer cut lobes.

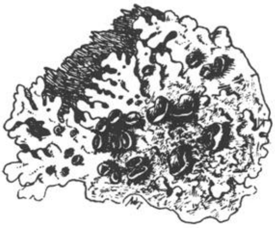

Fig. 2. *P. tiliacea.*

Parmelia tiliacea (Hoffm.) Floerk. (Fig. 2.) This pretty lichen grows on rocks, trees, and dead wood; it adheres closely to the substratum. The lobes are narrow and round, quite smooth. Glaucescent in color usually, but sometimes a light gray. Beneath it is black and densely covered with black fibrils. Apothecia are frequent, medium in size. The disk is dark brown with a reddish tinge, the margin is crenulate.

Parmelia Borreri Turn. While this is not an uncommon species it is not so generally found as the variety *rudecta.* The thallus is very rough and is often covered with white soredia which give it a speckled appearance. It clings quite closely to the trees or dead wood on which it is found. Is greenish brown in color, beneath is lighter, at the margins are white hair-like fibrils. The apothecia are large with entire margins, the disk dark chestnut.

Parmelia Borreri Turn, var. rudecta, Tuckm. (Plate VI. 1.)—In general appearance the variety is much like *P. Borreri,* only it is thickly covered with isidioid granules, the lobes are more divided and the margins are often broken, showing the woolly medullary layer. It does not cling so closely to the substratum. Underneath the thallus is light brown, and is covered thickly with short, dark fibrils. Apothecia are not frequent. Is found on trees, dead wood and rocks.

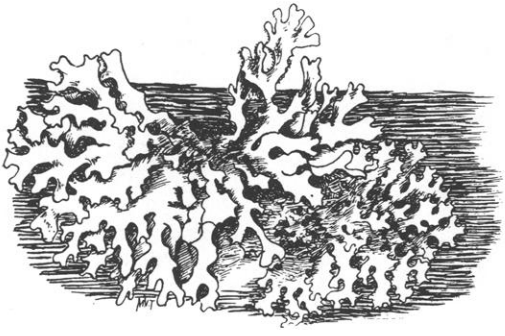

Fig. 3. *P. saxatilis.*

Parmelia saxatilis (L.) Fr. (Fig. 3.) Thallus with many cleft, narrow, blunt lobes, more or less reticulated and lacunose, margins wavy with white soredia. The color is greenish or ashy gray, sometimes turning to reddish brown. Beneath it is black and well covered with black fibrils. The apothecia are medium in size with rather an irreg. ular margin, the disk is chestnut.

Parmelia saxatilis (L.) Fr. var. sulcata, Nyl. This variety is distinguished from *P. saxatilis* by the presence of conspicuous rounded or oblong soredia, which become confluent, giving the surface of the thallus a mealy appearance. Beneath it is very black and covered with short stiff black fibrils. Is found on dead wood and rocks with *P. saxatilis.*

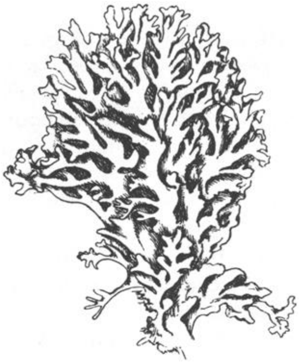

Fig. 4. *P. physodes.*

PARMELIA PHYSODES (L.) Ach. (Fig. 4.) This beautiful lichen is frequently found on the same dead limb of a white pine with *Cetraria lacunosa and C. ciliaris.* It is not often found in fruit, but is readily identified by its smooth delicately tinted gray green thallus, the lobes of which are finely cut, the margins slightly curled over showing the white soredia on the under side. Like the Cetrarias it is loosely attached to the substratum. It often grows around the small twigs of the dead limbs of hemlocks, giving them a hoary appearance. Beneath the thallus is almost black except at the margins where it is brown and smooth with no fibrils. The lobes are somewhat convex, many and deeply cleft, usually overlapping each other. The apothecia, which are very rare, are large, the disk is reddish brown with an entire margin. The shape of the apothecium is more that of an urn than a cup.

PARMELIA COLPODES (Ach.) Nyl. (Plate VI. 2.) The thallus is flat and smooth in this species, with many cleft lobes, coriaceous, glaucescent in color. It is somewhat like *P. physodes* in appearance, but the lobes of the thallus do not turn over, they are flat and the whole effect is smoother. It is found on trees and old wood, is common in the Eastern and Southern States.

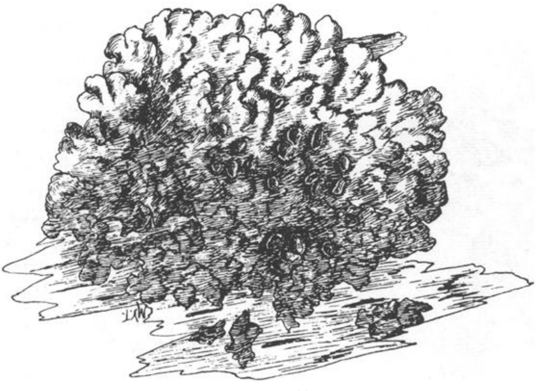

Fig. 5. *P. olivacea.*

PARMELIA OLIVACEA (L.) Ach. (Fig. 5.) As the specific name indicates this lichen is olive in color. When young it is a light olive, but grows darker as it develops, and is finally an olive brown. The lobes are flat and rounded, growing much like *P. caperata*, except that they adhere closely to the substratum. Often the upper part of the thallus is covered with isidioid granules. Apothecia are frequent and are dark brown with wrinkled margins. Beneath, the thallus is black with fine fibrils. *P. olivacea* grows on trees and is difficult to collect unless a part of the bark is taken. When scraped off and examined with a hand lens the lower cortical layer is seen to be very thin, the woolly medullary layer showing distinctly.

Parmelia stygia (L.) Ach. The dark brown, almost black, of the thallus of this species is a distinguishing mark. It is smooth and shining, the lobes are linear, many cleft and contorted, with curved tips. Beneath it is black, with fine fibrils. The apothecia are not common, the disk is very dark chestnut, with granulate margin. This species is found on rocks in the higher mountains of the Eastern States. It is very abundant in Alaska.

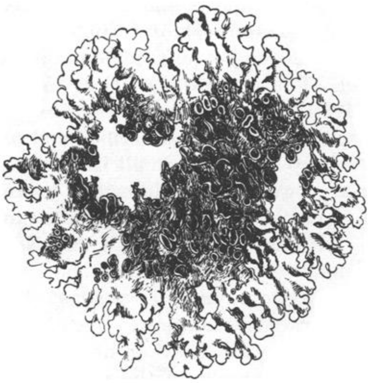

Fig. 6. (Reduced ⅓.) *P. conspersa.*

Parmelia conspersa (Ehrh.) Ach. (Fig. 6.) Thallus divided into slender lobes which are smooth and polished. At the centre are sometimes found greenish soredia, but more frequently apothecia are present; these vary in size, are sometimes very large. The disk is dark chestnut with entire margin when young, which becomes wavy and broken with age. Beneath, the thallus is usually very dark, with fine fibrils here and there. Found on rocks and stones in great abundance, and usually fertile. It clings closely to the substratum, but when moist can be detached.

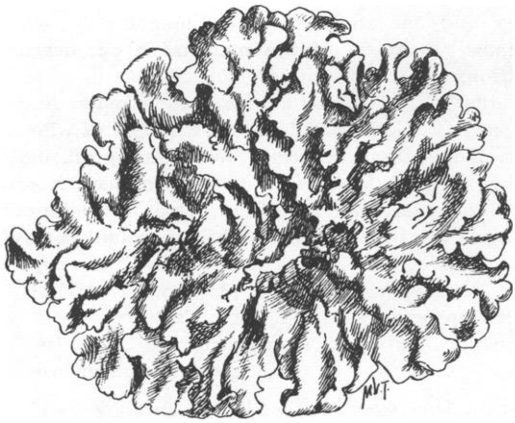

Fig. 7. *P. caperata.*

Parmelia caperata (L.) Ach. (Fig. 7.) This is one of our most conspicuous lichens. The thallus is leaf-like, growing naturally in round mats. It is a light pea green, undulate, wrinkled, usually covered, especially near the centre, with soredia which are a lighter green than the thallus. The lobes are rounded with entire tips. Beneath it is black except at the margin, where it is reddish brown; has some black fibrils. Apothecia are rare, when present they are cup shaped with crenulate margins, which are often covered with isidioid granules. *P. caperata* is found on trees and rocks.